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**Biomechanics of *Tetrahymena* escaping from dead ends<sup>1</sup>** TAKUJI ISHIKAWA, KENJI KIKUCHI, Tohoku University — Behaviors of swimming microorganisms in complex environments are important in understanding cells distribution in nature and in industries. Although cells swimming and spreading in an infinite fluid has been intensively investigated, that in a narrow region bounded by walls is still unclear. Thus, in this study, we used *Tetrahymena thermophila* as a model microorganism, and experimentally investigated its behavior between flat plates with an angle. The results showed that the cells tended to escape from the narrow region, and the swimming velocity and the radius of curvature of the trajectories decreased as they swam narrower region. We then developed a computational model of swimming *Tetrahymena*. The results showed that the escaping behavior could be well explained by fluid mechanics. The obtained knowledge is useful in understanding cells behaviors in complex environments, such as in porous media and in a granular matter.

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Takuji Ishikawa  
Tohoku University

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